

ANAN'YEV, M.G.; VAYNRIB, Ye.A.; VISHNEVSKIY, A.A.; KOZLOV, Yu.G.; LEVITSKAYA, L.A.; MARTYNOV, L.N.; MUSHEGYAN, S.A.; FRID, Ye.A.

Improvement of the artificial heart apparatus designed by the Scientific Research Institute of Experimental Surgical Apparatus and Instruments. Eksper.khir. 4 no.5:3-8 S-O '59. (MIRA 13:1)

1. Iz Nauchno-issledovatel'skogo instituta eksperimental'noy khirurgicheskoy apparatury i instrumentov (dir. M.G. Anan'yev) i Instituta khirurgii imeni A.V. Vishnevskogo (dir. - deystvitel'nyy chlen AMN SSSR A.A. Vishnevskiy) AMN SSSR.

(HEART, MECHANICAL, equipment and supplies)

VAYNRIB, Ye.A.; MARTYNOV, L.N.; FRID, Ye.A.; KOZLOV, Yu.G.; ANAN'YEV, M.G.;  
MUSHEGYAN, S.A.; LEVITSKAYA, L.A.

Apparatus for artificial blood circulation. Med.prom. 14 no.11:40-45  
N '60. (MIRA 13:11)

1. Nauchno-issledovatel'skiy institut eksperimental'noy khirurgicheskoy  
apparatury i instrumentov.

(BLOOD--CIRCULATION, ARTIFICIAL)

(MEDICAL INSTRUMENTS AND APPARATUS)

ANAN'YEV, M.G.; VAYNRIB, Ye.A.; KOZLOV, Yu.G.; LEVITSKAYA, L.A.; MARTYNOV,  
L.N.; MUSHEGYAN, S.A.; FRID, Ye.A.

Improved apparatus for artificial blood circulation (the AIK of 1959)  
and new data on its use. Trudy NIIKHAI no.5:113-118 '61.

(MIRA 15:8)

1. Nauchno-issledovatel'skiy institut eksperimental'noy khirurgi-  
cheskoy apparatury i instrumentov.

(PERFUSION PUMP (HEART))

TRAPEZNIKOV, N.N.; AVDEYEVA, I.A.; MUSHEGYAN, S.A.; LEVITSKAYA, L.A.

Experimental basis of chemotherapy of malignant tumors of the  
extremities by the method of regional perfusion. Vest.AMN SSSR 17  
no.6:67-72 '62. (MIRA 15:8)

1. Institut eksperimental'noy i klinicheskoy onkologii AMN SSSR i  
Institut eksperimental'noy khirurgicheskoy apparatury i instrumentov  
Ministerstva zdravookhraneniya SSSR.  
(EXTREMITIES (ANATOMY)--CANCER) (CHEMOTHERAPY) (PERFUSION PUMP (HEART))

YAVORSKIY, V.V.; MUSHEGYAN, S.A.; TRAPEZNIKOV, N.N.

Experimental and clinical bases for using the extracorporeal  
circulation apparatus AIK-RR-62 for regional perfusion. Eksp.  
khir. i anest. 8 no.5:16-19 S.D '63. (MIRA 17:6)

MUSHEGYAN, S.A.; G RDZYEV, A.V.; KANTAN V, L.N.; SYER, N.A.

AJK-R<sup>2</sup>-62 apparatus and its use in the surgical clinic.  
Vop. onk. 11 no.9:75-79 1968.

1. Iz Nauchno-Issledovatel'skoy laboratorii eksperimental'noy  
khirurgicheskoy apparatury i instrumentov (M. - Mashinostroyeniye  
vriach RSFSR M.G.Anan'yev).

MUSKOVITSEV, A.

Investigation of Elliptic Boundary Value Problems and Two Dimensional Elasticity Equations. V. Muskhvishvili. *Mathematische Annalen*, Vol. 107, No. 2, 1932, pp. 252-312. Australian Council for Scientific and Industrial Research, Division of Aeronautics, Translation No. 8, February, 1946. 55 pp.

In the first section the complete solution is given of the fundamental biharmonic problem for the so-called "interior" problem referring to a finite domain bounded by a simple closed curve; and for the "exterior" problem for the case of the infinite domain. In the second section the solutions of the two fundamental problems in two-dimensional elasticity are given for domains finite or infinite bounded by a single closed contour. The method used (Cauchy's integral method) leads in the general case to Fredholm equations. By this same method the complete solution may be obtained for certain domains in a form that is simple and suitable for practical application.

2000

REV. 1946

MUSHELISHVILI, N. I.

\*Mushelišvili, N. I. Nekotorye osnovnye zadachi matematičeskoj teorii uprugosti. [Some Fundamental Problems of the Mathematical Theory of Elasticity]. - 3rd ed. Izdatel'stvo Akademii Nauk SSSR, Moscow-Leningrad, 1949. 636 pp.

The first and second editions appeared in 1933, 1935. The author states that the general plan of the book is the same, but that most of it has been rewritten; integrals of Cauchy type are more fully discussed (a special chapter is now devoted to them); there is a completely new chapter on the solution of boundary problems of the plane theory of elasticity by reduction to a problem with a linear relation between the boundary values on either side of the boundary (Hilbert's problem).

Smirnov

2300

Source: Mathematical Reviews, 1950 Vol. 11 No. 8



MUSHELISHVILI, N-I.

Nikolai Ivanovič Mushelišvili. For his sixtieth birthday.  
Akad. Nauk SSSR. Prikl. Mat. Meh. 15, 265-278 (1 plate)  
(1951). (Russian)  
A survey of his work and a list of his published papers.

Source: Mathematical Reviews,

Vol 13 No 1

AUTHOR: Mushenko, A. I SOV/5-58-5-3/20

TITLE: The Tectonics of the Sedimentary Blanket Deposit of the Voronezh Antecline (Tektonika osadochnogo pokrova Voronezhskoy anteklizy)

PERIODICAL: Byulleten Moskovskogo obshchestva ispytateley prirody, Otdel geologicheskoy, 1958, Nr 5, pp 38 - 51 (USSR)

ABSTRACT: The Voronezh antecline was formed by Paleozoic and Mesozoic layers of sedimentary rocks, which with a sharp unconformity angle, cover the ancient mostly-dislocated and metamorphized Pre-Cambrian crystalline foundation. The diversity of these rocks in different parts of the antecline indicates that these parts were formed under different geological conditions. The author gives a very detailed description of the antecline and of the conditions which governed the accumulation of sedimentary layers. He finds that the formation of the antecline in the Paleozoic and Mesozoic eras was caused by two sinking zones connected with the antecline - the Moscow syncline and the Dnepr-Donets depression. The following geologists are mentioned by the author: A. D. Arkh-

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SOV/5-58-5-3/20

The Tectonics of the Sedimentary Blanket Deposit of the Voronezh Antecline

angel'skiy, N.S. Shatskiy, A.A. Dubyanskiy, D.N. Sobolev,  
V.N. Sobolevskaya, V.N. Preobrazhenskaya, and V.A. Zhukov.  
There are 4 maps, 2 profiles and 18 Soviet references

Card 2/2

MUSHENKO, A.I.; SHATSKIY, N.S., akademik, glavnyy red.; NOVIKOVA, A.S.,  
ovt.red.; DASHEVSKIY, V.V., red.izd-va; YEGOROVA, N.F., tekhn.red.

[Tectonics of the sedimentary cover of the Voronezh arch]  
Tektonika osadochnogo pokrova Voronezhskoi anteklizy. Moskva,  
Izd-vo Akad.nauk SSSR, 1960.97 p. (Akademiia nauk SSSR.  
Geologicheskii institut. Trudy, no.38) (MIRA 14:3)  
(Voronezh Province—Rocks, Sedimentary)

MUSHENKO, A.I.

Method of representing tectonic forms by isolines. Metod.izuch.  
tekt.struk. no.1:7-55 '60. (MIRA 14:8)  
(Geology, Structural--Maps)

MUSHENKO, A.I.

Structure and formation of domes in the Russian Platform. Izv. AN  
SSSR. Ser. geol. 26 no. 4:44-58 Ap '61. (MIRA 14:5)

1. Geologicheskii institut AN SSSR, Moskva.  
(Russian Platform---Domes (Geology))

MUSHENKO, A.I.

Structure of the eastern slope of the Moscow syncline. Dokl.  
AN SSSR 142 no.3:653-656 Ja '62. (MIRA 15:1)

1. Geologicheskii institut AN SSSR. Predstavleno akademikom  
A.L.Yanshinym.

(Moscow region--Geology, Structural)

MUSHENKO, A.I.

Some characteristics of the development of structures in the Russian  
Platform. Trudy GIN no.92:147-161 '63. (MIRA 17:10)



MUSHENKO, A.I.

Inversions of tectonic movements in the Russian Platform.  
Geotektonika no.1:22-34 Ja-F '66. (MIRA 19:1)

1. Geologicheskii institut AN SSSR.

MUSHENKO, D.V.

USSR/Chemical Technology. Chemical Products and Their I-14  
Application--Treatment of natural gases and  
petroleum. Motor fuels. Lubricants.

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 9310

Author : Katsman, S. V. and Mushenko, D. V.

Inst : Not given

Title : The Reactions of Some High-Molecular Hydrocarbons  
with Steam

Orig Pub: Zh. prikl. khimii, 1956, Vol 29, No 6, 955-957

Abstract: The reaction of n-decane, benzene, naphthalene,  
and  $\alpha$ -methyl-naphthalene with steam over an  
industrial Ni-catalyst, used in the treatment of  
methane to produce  $H_2$  [sic], has been investi-  
gated. The catalyst was activated by treatment  
with  $H_2$  for two hours at  $700^\circ$ . The gaseous pro-  
ducts from the decomposition of the hydrocarbons  
contain about 70%  $H_2$  and 10-20%  $CO_2$  and CO. The  
ratio  $CO_2:CO$  increases as the temperature is

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MUSHENKO, D. V.

Distr: hEhj

27 5  
Recovery of waste and spent aluminum silicate catalyst.

15. L. Kravtsov, D. V. Mushenko, M. V. Valtisova, and L.

A. Boyarinova. U.S.S.R. 108,698, Nov. 25, 1957. Waste

and spent Al silicate catalyst spheres are dissolved in NaOH

having a concn. of 150-200 g./l. at about 40°. The result-

ing colloidal suspension is allowed to settle out and then

11/ filtered off for re-use. M. Hosh-

*[Handwritten signature]*

**AUTHORS:** Mayorov, D. M. and Mushenko, D. V. SOV 65-58-6-5/13  
**TITLE:** Hydrogenation of  $C_{10} - C_{16}$  Acids to Alcohols (Gidrirovaniye kislot  $C_{10} - C_{16}$  v spirty)  
**PERIODICAL:** Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr.6, pp. 24 - 29 (USSR).

**ABSTRACT:** Primary high-molecular aliphatic alcohols and some of their derivatives have recently gained increasing importance in the USSR as well as abroad. Work carried out in the USA, UK, and France is reviewed. In 1956 the authors investigated the hydrogenation of  $C_{10} - C_{16}$  acids to the corresponding alcohols. The acids were obtained from the Shebekino Combine SZhK. Their properties and composition are tabulated. Distillation was carried out on a 15-plate vacuum rectification column. A laboratory continuous circulation plant was used for tests at 200 - 300 atms pressure for 30 - 450 hours with 200 - 400 ml of copper chromate catalyst. The raw materials and the hydrogenate were analysed for their acid number, saponification number, quantity of non-saponified matter and water content. In the non-saponified part the content of hydrocarbons and alcohols was determined chromatographically. It could

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Hydrogenation of  $C_{10} - C_{16}$  Acids to Alcohols. 200/65 28.6.13/13

be seen that with increasing temperature the depth of conversion of acids increases from 19% - 79% (Table 1) and that the alcohol and hydrocarbon content in the hydrogenate increases sharply. At pressures of 300 atms and a ratio of hydrogen to raw material equalling 200:1 much greater rates of conversion of the acid with appropriate yields of the products could be achieved (Table 2). Experiment 36 was carried out to investigate conditions for increasing the yield of alcohols and for decreasing the yield of hydrocarbons. Conditions of this test as well as characteristics and composition of the hydrogenate are tabulated. Samples of sodium salts of alkyl sulphonates were tested for their detergent properties and experiments using these alcohols for synthesizing high quality oil additives were carried out by members of the VNIIMP. The corrosion resistance of various metals to fatty acids was tested (Tables 3 and 4); chemically pure Al and Ni, and some types of stainless steel, were found to have the highest corrosion resistance. There are 4 Tables and 8 References: 1 French, 3 English, 1 Japanese and 3 Soviet.

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ASSOCIATION: LenNII

5.3300(B)

~~5 (1), 5 (3)~~

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## AUTHORS:

Vishnevskiy, N. Ye. Mushenko, D. V.

SOV/153-2-5-25/31

## TITLE:

Extraction of Isobutylene From the Butane-butylene Fraction

## PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 5, pp 779 - 783 (USSR)

## ABSTRACT:

In the course of producing butyl-sulfuric acid from the cracking gases, the isobutylene contained in the butane-butylene fraction, is not only completely polymerized but it also draws the n-butylene into the copolymerization. This reduces the yield in secondary butyl alcohol. It was established in 1957 at the Institute of the authors (formerly LenNII, Leningradskiy nauchno-issledovatel'skiy institut po pererabotke nefi i polucheniyu iskusstvennogo zhidkogo topliva - Leningrad Scientific Research Institute for Processing Petroleum and Producing Synthetic Liquid Fuels) that the mentioned raw material may, at the most, contain 2% of isobutylene. Therefore, the surplus isobutylene must previously be extracted when using this method. One variant of the reaction of A. M. Butlerov (Refs 1-4) was reproduced by Standard Oil in 1942 (Ref 5), and they obtained a 1.2%-content of isobutylene. There is no information on the design of the equipment for the reaction and on the capacity of the reaction space. The authors achieved

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# Extraction of Isobutylene From the Butane-butylene Fraction

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SOV/153-2-5-25/31

the isobutylene extraction from the mentioned fraction with a method of two-step counterflow and 65% sulfuric acid. The duration of contact was 9 minutes per step. This short duration was achieved due to the isothermal reaction occurring because of intensive stirring (Ref 6, Fig 2). This reduced the diffusion difficulties in a high degree. The raw material was the butane-butylene fraction from the Lyuberetskiy Petroleum Refinery. Table 1 contains the results of experiments. Neither a decrease of temperature from 45° to 30°C, nor an additional one to 25°-35°C, applying a 70%  $H_2SO_4$  increased the extraction (Table 2), but the content of isobutylene in the final product increased to 1.4 mol/mol  $H_2SO_4$ . Therefore the optimum conditions of extraction are: 45°C, pressure 10 atm, ratio between raw material and  $H_2SO_4$  9 : 1, initial concentration of isobutylene 10%, final concentration 2%, duration of contact 10 minutes per step. Figure 1 shows the dependence of the saturation degree of sulfuric acid on the isobutylene concentration. Thus, the main characteristic factors of the two-step process can be observed. Table 3 shows

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**Extraction of Isobutylene From the Butane-butylene Fraction**

the experimental data of the extraction method described. They are in accordance with the theoretical explanations. The results of the second step even surpass them. From the data in table 2 it follows that approximately 65% of the isobutylene passes over into the acid layer in each step. From a raw material containing about 10-12% isobutylene, approximately 80% of its potential is extracted. Its content in the concentrate is 96%. A method of extraction of isobutylene with 40% sulfuric acid, developed by Professor M. S. Nemtsov et al. from the Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka (All-Union Scientific Research Institute of Synthetic Rubber) is mentioned in the article. There are 2 figures, 3 tables, and 6 references, 5 of which are Soviet.

**ASSOCIATION:** Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov - VNIINEFTEKHIM (All-Union Scientific Research Institute of Petroleum-chemical Processes - VNIINEFTEKHIM)

Card 3/3



MUSHENKO, D.V.

Aromatic hydrocarbon content of catalytically cracked kerosine.  
Trudy VNIINeftekhim no.3:15-26 '60. (MIRA 14:2)  
(Kerosine) (Hydrocarbons--Analysis)

MUSHENKO, D.V.

Catalytic cracking of aromatized distillates. Trudy VNIIMeftekhim  
no.3:27-32 '60. (MIRA 14:2)  
(Hydrocarbons) (Cracking process)

S/081/61/000/011/024/040  
B103/B202

AUTHOR: Mushenko, D. V.

TITLE: Repeated catalytic cracking ("tandem cracking") of kerosene  
of direct distillation

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 479 - 480,  
abstract 11M167(11M167). ("Tr. Vses. n.-i. in-t neftekhim.  
protssessov", 1960, vyp. 3, 33 - 35)

TEXT: It was the aim of this paper to obtain data on successive, catalytic cracking of distillates in order to check the expediency of recirculation of intermediate fractions. For this purpose catalytic cracking of kerosene or direct distillation of Kalinskaya petroleum was carried out five times successively on a laboratory apparatus at 450°C, at a volume rate of 0.7, under atmospheric pressure, on a catalyst with an activity index of 34. The gasoline boiling up to 200°C was separated from each catalyzate obtained and the residue was subjected to cracking under the same conditions. It was demonstrated that in each of the successive cracking cycles the gasoline

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S/081/61/000/G11/024/040  
B103/B202

# Repeated catalytic cracking...

and gas yield decreases, the coke yield increases, and the quality of the gasoline becomes considerably poorer. The benzine obtained by cracking kerosene from direct distillation contains the following hydrocarbons in %: unsaturated 18.3, aromatic 24.4, paraffins 36.5, naphthene 22.9 and after the fifth cracking cycle: 71.1; 2.4; 23.0; 2.9. The increase in aromatic hydrocarbons in the raw material in each successive cracking cycle (from 21.8% in kerosene of direct distillation to 61.8 % in the raw material of the fifth cycle) leads to a considerable deterioration of the technological indices of the process. It is concluded that recirculation of the intermediate fractions in catalytic cracking without previous preparation of the recirculating product is inexpedient. [Abstracter's note: Complete translation.]

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S/081/61/000/013/014/028  
B110/B205

AUTHORS: Mushenko, V. M., Mushenko, D. V.

TITLE: Effect of unsaturated hydrocarbons on the antiknocking characteristics of aviation gasolines

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1961, 524, abstract 13M278 (Tr. Vses. n.-i. in-t neftekhim. protsessov, 1960, vyp. 3, 44-48)

TEXT: The authors studied the effect of admixtures of amylenes, obtained by dehydration of isoamylenic alcohol, on the octane numbers of mixtures of B-70(B-70) gasoline with commercial isooctane and of catalytically cracked gasoline. On the basis of the studies performed it was recommended to add 5-20% of the commercial pentane - amylenic fraction to aviation gasolines obtained by direct distillation in order to increase their octane numbers by 1-3. [Abstracter's note: Complete translation]

Card 1/1

MUSHENKO, V.M.; MUSHENKO, D.V.

Sulfuric acid refining of catalytically cracked gasolines. Trudy  
VNIINEftekhim no.3:49-57 '60. (MIRA 14:2)  
(Airplanes—Fuel)

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S/081/61/000/011/037/040  
B110/B201

5.3300

AUTHORS:

Mushenko, V. M., Mushenko, D. V.

TITLE:

Antiknocking properties of aviation gasoline from  
catalytic cracking

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 11, 1961, 486, abstract  
11M219 (11M219) (Tr. Vses. n.-i. in-t neftekhim. protsessov,  
1960, vyp. 3, 58-69)

TEXT: A study has been made of the antiknocking properties of fractions  
obtained by distillation on the Gadaskin column and two-stage treatment  
(catalytic cracking and purification of the typical aviation component  
of Kalinskoye gas oil (Baku). The properties of initial gasoline were  
 $d_{40}^{20} = 0.7418$ ; initial boiling point =  $48^{\circ}\text{C}$ ; boiling out of  $97.5^{\circ}\text{C}$  at  
 $168^{\circ}\text{C}$ ; chemical group composition in %: olefins = 3.1; aromatics = 34.2;  
paraffins = 49.4; naphthenes = 13.0. Octane number (motor method) in  
pure form = 81.4; with 3 ml P-9 (R-9) per kg = 94.2. A study of the  
antiknocking properties of the fractions of this gasoline showed that the

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Antiknocking properties of ...  
highest octane number on addition of 3 ml R-9 is exhibited by the frac-  
tion 25-35°C which consists of 93.5% isopentane, 5.2% pentylene, and  
3.3% n-pentane. The octane numbers of the following fractions drop  
rapidly, pass through a minimum with the pure fractions 95-105°C, and rise again  
thereafter. The octane numbers in the fractions dropping sharply, the oct  
this tail is related to the accumulation of aromatic than the head change, but  
is related to the accumulation of aromatic than the head change, but  
Dearomatizing of the fractions by a double treatment with 150 wt. H<sub>2</sub>SO

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S/OB' 61/000/011, 037, 040  
R110, R201

caused the octane numbers in the fractions dropping sharply, the oct  
numbers of the dearomatized fractions dropping sharply, the oct  
the boiling temperature. Fraction 85-125°C is regularly with a  
aromatics, and a rise numbers. The removal of paraffin and naphthenic  
with low octane to consist. Fraction 85-125°C is regularly with a  
leads to a rise numbers. The removal of paraffin and naphthenic  
94.2 to 98 by the motor method, and from gasoline with f  
method. Methods of refining the fraction with the aid  
(SO<sub>2</sub>) separation of the fraction with the aid  
into an aromatic and a naphthenic par

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S/081/61/000/011/037/040  
B110/E201

Antiknocking properties of ...

highest octane number on addition of 3 ml R-9 is exhibited by the fraction 25-35°C which consists of 93.5% isopentane, 3.2% pentylene, and 3.3% n-pentane. The octane numbers of the following fractions drop rapidly, pass through a minimum with fraction 95-105°C, and rise again thereafter. The octane numbers of the pure fractions also change, but the tail fractions have higher octane numbers than the head fractions; this is related to the accumulation of aromatic hydrocarbons in them. Dearomatizing of the fractions by a double treatment with 150 wt. % H<sub>2</sub>SO<sub>4</sub>

caused the octane numbers in the fractions to drop sharply, the octane numbers of the dearomatized fractions dropping regularly with a rise of the boiling temperature. Fraction 85-125°C is shown to contain little aromatics, and to consist chiefly of paraffin and naphthenic hydrocarbons with low octane numbers. The removal of this fraction from the gasoline leads to a rise of the octane number of gasoline with 3 ml R-9 from 94.2 to 98 by the motor method, and from 96.9 to 99.1 by the 1-C (1-S) method. Methods of refining the fraction 85-125°C are suggested:  
a) by separation of the fraction with the aid of a selective solvent (SO<sub>2</sub>) into an aromatic and a naphthenic paraffin part, and subsequent

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B110/B201

Antiknocking properties of ...

introduction of aromatics into the gasoline; b) catalytic reforming. The latter is the most expedient way of improving the octane number of this fraction. Catalytic reforming on aluminum-molybdenum catalysts permits 80% aviation gasoline with the octane number 89 to be obtained in pure state (motor method). Addition of a reformed substance to the remaining fractions allows gasoline Б 100/130 (B 100/130) to be produced without alkylate addition. [Abstracter's note: Complete translation.]

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MUSHENKO, D.V.; KATSMAN, S.V.; TSELLINSKAYA, T.F.

Catalytic cracking of the primary products of synthesis. Trudy  
VNIINEftekhim no.3:70-87 '60. (MIRA 14:2)  
(Cracking process)

S/081/61/000/011/025/040  
B103/B202

AUTHORS: Mushenko, D. V., Mochalovskaya, A. P.

TITLE: Catalytic cracking of distillates with increased nitrogen content

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11. 1961, 480, abstract 11M170(11M170). ("Tr. Vses. n.-i. in-t neftekhim. protsessov", 1960, vyp. 3, 8S - 90)

TEXT: The authors present results of experiments with catalytic cracking of gas oils by means of hydrogenation in liquid phase of the Stolyarovskiy masut containing 1.8 - 2.0 wt % of nitrogen bases. Cracking at a standard and a coarse-pored catalyst at 450°C and a volume rate (VR) of 0.7, yields 22 - 23 %, at a VR of 1.5 the yield decreases to 15 - 16 %. The unsatisfactory results of the cracking of gas oils cannot be explained by the composition of their hydrocarbons but are apparently due to the poisoning of the catalyst by decomposition products of the nitrogen bases. After the removal of the nitrogen bases from the gas oil sample their cracking

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Catalytic cracking of distillates...

S/081/61/000/011/025/040  
B103/B202

yielded 29.4 % gasoline at a VR = 0.7 and 25.2% at a VR = 1.5. A 50 % yield is achieved with a raw material containing bases at a VR = 0.51 and a raw material without bases at a VR = 0.68. Hence the removal of bases increases their capacity of being cracked 1.3 times. The benzene yield in this case is 1.2 times higher and the coke yield is 2/3 as compared to the bases containing raw material. 10 references. [Abstracter's note: Complete translation.]

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MUSHENKO, D.V.

Catalytic cracking of the distillates of Stolyarovka crude oil  
high in sulfur and resins. Trudy VNIINEftekhim no.3:91-96 '60.  
(MIRA 14:2)

(Petroleum--Refining)

MASLYANSKIY, G.N.; MUSHENKO, D.V.

Catalytic cracking of gas oils in the presence of propylene and of  
the propane-propylene fraction. Trudy VNIINEftekhim no.3:97-102 '60.  
(MIRA 14:2)

(Cracking process) (Propene)  
(Propane)

MUSHENKO, D.V.; BOYARINOVA, L.A.

Chemical regeneration of aluminosilicate catalysts. Trudy VNIINefte-  
khim no.3:103-111 '60. (MIRA 14:2)  
(Catalysts) (Aluminosilicates)



MUSHENKO, D.V.; MUSHENKO, V.M.; TEREBILOVA, M.A.

Determination of fluorine in an aluminosilicate catalyst and in  
alumina by hydrolysis with superheated steam. Trudy VNIINEftekhim  
no.3:112-115 '60. (MIRA 14:2)

(Fluorine—Analysis)

(Aluminosilicates)

(Alumina)

KATSMAN, S.V.; MUSHENKO, D.V.; TEREBILOVA, M.A.

Contact coking and catalytic cracking of fuel oil from Taimasy  
Devonian oil. Trudy VNIINEftekhim no.3:116-141 '60. (MIRA 14:2)  
(Petroleum as fuel)

MUSHENKO, D.V.; MOCHALOVSKAYA, A.P.

Contact coking and catalytic cracking of Stolyarova crude oil high  
in sulfur and resins. Trudy VNIINEftëkhim no.3:142-149 '60.

(Petroleum as fuel)

(MIRA 14:2)

S/081/61/000/012/022/028  
B103/B202

AUTHOR: Mushenko, D. V.

TITLE: Contact coking of mazout on activated carbon

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 12, 1961, 524, abstract 12M165. (Tr. Vses.n.a. in-t neftekhim. protsessov, 1960, vyp. 3, 150-153)

TEXT: Mazout was subjected to contact coking on powdery activated carbon in the laboratory. With lower apparent density the activity of carbon was higher. In the coking experiments ( $475^{\circ}\text{C}$ , volume rate  $0.7 \text{ hr}^{-1}$ , carbon addition 2 kg per kg of starting material) the gasoline yield decreased from 30.7 to 2% and the yield in the coking distillate (CD) from which gasoline had been removed increased from 10.6 to 76.3% if the apparent density of carbon was increased from 0.587 to 0.800. Catalytic cracking of CD proved that with CD that had been obtained from a less active catalyst, the gasoline yields are higher and the coke yields are lower; furthermore, it was found that the use of activated carbon in contact coking with subsequent catalytic cracking of CD shows no

Card 1/2

Contact coking of mazout on ...

S/081/61/000/012/022/028  
B103/B202

advantages over the method in which non-activated carbon is used.  
[Abstracter's note: Complete translation.]

Card 2/2

MUSHENKO, D.V.

Conversion of fuel oil components and balance of elements during  
contact coking. Trudy VNIINeftekhim no.3:154-156 '60.

(MIRA 14:2)

(Petroleum as fuel)

MUSHENKO, D.V.

Refining of the contact coking distillate and the catalytic cracking  
of refined products. Trudy VNIINeftekhim no.3:157-162 '60.

(MIRA 14:2)

(Petroleum—Refining)

MUSHENKO, D.V.; LEVINA, M.I.; TAMMUK, M.E.

Hydrogenation of distillates obtained from the catalytic cracking  
of Romashkino crude oil on a nickel-molybdenum catalyst. Trudy  
VNIINeftekhim no.3:163-172 '60. (MIRA 14:2)  
(Petroleum—Refining) (Motor fuels)  
(Hydrogenation)



S/081/61/000/011/028/040  
B103/B202

AUTHORS: Mushenko, D. V., Levina, M. I., Tammik, M. E.

TITLE: Hydrogenation of the wide fraction of catalytic cracking of Romashki petroleum on catalysts with increased catalytic activity

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 481, abstract 11M176 (11M176). ("Tr. Vses. n.-i. in-t neftekhim, protsessov", vyp. 3, 1960, 173-177)

TEXT: Two new catalysts have been suggested: fluorine-nickel-molybdenum catalyst with the contents (in %): 0.5 F, 4.2 Ni, 6.8 Mo and chromium-molybdenum catalyst with 3.3 Cr and 5.6 Mo. They are used for hydrogenating a catalyzate from which benzene boiling up to 200°C has been removed and which had been obtained on cracking Romashki petroleum by using a powdery catalyst by the method of AZNII NP. The products were hydrogenated at a pressure of 100 atm and a temperature of 425°C. The product resulting from a two-stage processing of the strongly sulfurous Romashki petroleum was 76.1 % of pure commercial products, among them

Card 1/2

S/081/61/000/011/029/040  
B103/B202

AUTHORS: Levina, M. I., Mushenko, D. V., Rysakov, M. V.

TITLE: Catalytic hydrogenation of sulfurous gas oils of catalytic and thermal cracking for the production of a Diesel oil and a raw material for catalytic cracking

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 481, abstract 11M178 (11M178). ("Tr. Vses. n.-i. in-t neftekhim. protsessov", vyp. 3, 1960, 178 - 182)

TEXT: It was found that by hydrogenating a mixture of two kinds of the gas oil of catalytic cracking and the Diesel oil (from Devonian petroleum) in the ratio 1 : 1 a high-quality summer Diesel oil can be obtained by means of a Co-Mo catalyst at 30 atmospheres excess pressure. When hydrogenating the gas oil fractions 200 - 350°C and 215 - 490°C of catalytic cracking and of the cracking residue (from the same petroleum) raw materials for catalytic cracking can be obtained at 50 - 100 atmospheres excess pressure whose properties are superior to those of raw materials obtained by direct distillation. [Abstracter's note: Complete translation.]  
Card 1/1

VISHNEVSKIY, N.Ye.; MAYOROV, D.M.; MUSHENKO, D.V.

Hydrogenation of fuel oil under a pressure of 100 atm. Trudy  
VNIINeftekhim no.3:183-186 '60. (MIRA 14:2)  
(Petroleum as fuel) (Hydrogenation)

24828

3/081/61/10/011/35/14  
B110/B961

5 3300

AUTHORS: Telegin, V. G., Kobelev, V. A., Mushenko, I. V.

TITLE: Alkylation of propylene by isobutane in the presence of hydrofluoric acid

PERIODICAL: Referativnyi zhurnal. Khimiya, no. 11, 1960, p. 187-192, at 11M217 (11M217)(Tr. Vses. n.-i. is-sledsk. prot. sov., 1960, vyp. 3, 187-192)

ABST. The alkylation of propylene by isobutane in the presence of HF has been studied. Commercial 98% isobutane and propylene, obtained by dehydration of isopropanol, were used for the purpose. Anhydrous hydrofluoric acid containing 98.5% of HF and 1.5% of SO<sub>2</sub> was taken as a catalyst. In their experiments, the authors varied the reaction temperature between 10 and 24°C, the duration of contact from 5 to 15 minutes, the molar ratio of isobutane to propylene from 12.5:1 to 1:1, and the degree of HF dilution by water at a constant pressure of 1 atm. The quality of the alkylate is hardly affected by temperature, whilst its yield increases with a rise in temperature (at 15°C it is 10% referred to

Card 1/2

24828

3,081/01 11/35/44  
B116/300

Alkylation of propylene by ...

propylene, and at 35-40°C it is 335-340%. When the duration of contact is prolonged, the yield in alkylate rises, and the composition changes in that the amount of primary products (2,3-dimethyl pentane) is reduced, while that of secondary products (2,2,4-trimethyl pentane) increases. Raising the molar ratio from 1.6 to 1.8, results in an increase of the alkylate yield from 16% to 244% referred to propylene, of the content of aviation alkylate in the alkylate from 85.3 to 95.2%, of the content of 2,2,4-trimethyl pentane in the alkylate from 15.9 to 23.8%, and of the octane number from 67.6 to 91.1 (motor method). Dilution of HF by water lowers its catalytic activity and favors fluorination and polymerization reactions. Accumulation of resin in the acid up to 5% has a favorable influence on the yield and properties of alkylate. Optimum conditions for applying the new procedure have been proposed on the basis of the test results. [Abstractor's note: Complete translation.]

Card 2/2

5.3300

26195  
S/081/61/000/012/021/028  
B103/B202

AUTHORS: Telegin, V. G., Kobelev, V. A., Mushenko, D. V.

TITLE: Alkylation of butylenes by means of isobutane in the presence of hydrogen fluoride

PERIODICAL: Referativnyi zhurnal. Khimiya, no. 12, 1961, 524, abstract 12M162 (Tr. Vses. n.-i. in-t neftekhim. protsessov, 1960, vyp. 3, 193-194)

TEXT: A mixture consisting of 44% of isobutylene and 56% of n-butylenes was alkylated by means of commercial 90% isobutane in the presence of a catalyst (98.8% HF + 1.2% SO<sub>2</sub>), at a temperature of 30°C, a pressure of 10 at overpressure, and a volume ratio HF : hydrocarbons of 1 : 1. The experiments showed that the alkylate yield increases from 177 to 193% with an increase of the molar ratio isobutane : butylene from 4 : 1 to 10.8 : 1. In this case lighter alkylates are obtained with a low final boiling point. This method warrants - as compared to the sulfuric-acid alkylation of the same starting material - a higher yield (by about 10%)

Card 1/2

26195

S/081/61/000/012/021/028  
B103/B202

Alkylation of butylenes by means of ...

of aviation alkylate with an octane number higher by 1.5-2 points.  
[Abstracter's note: Complete translation.]

Card 2/2

24829

S/081/61/006/011/36/040  
B110/B201

53300

AUTHOR: Mushenko, D. V.

TITLE: Alkylation of amylenes and hexylenes by isobutane

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 486, abstract  
114218 (11M218)(Tr. Vses. n.-i. in-t neftekhim. protsessov,  
1960, vyp. 3, 195-209)

TEXT: Alkylation of the pentane-amylene and hexane-hexylene fractions of thermal cracking by isobutane in the presence of  $H_2SO_4$  has been studied under the following conditions: temperature,  $100^\circ C$ ; pressure, 10 At; duration of contact, 40 min; ratio of isobutane to olefin = 7.8-8.5 : 1; and ratio of  $H_2SO_4$  to hydrocarbon = 1:1. For the pentane-amylene fraction, the yield of alkylate was 160-165% referred to amylene, and that of aviation alkylate with a final boiling point of  $180^\circ C$  was 143-148% at an  $H_2SO_4$  concentration of 85-98%. The octane number of pure aviation alkylate as found by the motor method was 87.5-89. For the hexane-hexylene fraction in the presence of 80-98%  $H_2SO_4$ , the yield of

Card 1/2



5 3300

24827

S/081/61/000/011/34/040

B110/B201

AUTHOR: Mushenko, D. V.

TITLE: Alkylation of butylenes by isopentane

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 141-148, abstract 11M216 (11M216) (Tr. Vses. nauch. in-t neftekhim. protsessov, 1960, vyp. 3, 210-215)

TEXT: For the purpose of enlarging the resources for high octane-number components and making economic use of excess amounts of isopentane from catalytic cracking units, the suggestion is made to use isopentane for butylene alkylation. Commercial isopentane (95% isopentane, 4% n-pentane, and 1% n-butane) and a butylene mixture consisting of 40 parts of isobutylene and 60 parts of n-butylene were used here. Alkylation was performed at a temperature of 10°C, a pressure of 10 At., a contact duration of 40 minutes, and a weight ratio of isopentane to butylene of 0.5:1 in the presence of 86-98%  $H_2SO_4$ . The yield of alkylate was 70-80% referred to butylene, and that of aviation alkylate with a final boiling

Card 1/2

MAYOROV, D.M.; MERKULOVA, O.P.; MUSHENKO, D.V.; TEODOROVICH, V.P.

Selection of materials for the units performing the direct hydrogenation of higher fatty acids. Khim.prom. no.3:210-212 Mr '61.  
(MIRA 14:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

(Acids, Fatty) (Hydrogenation)

KOBELEV, V.A. [deceased]; MUSHENKO, D.V.; TELEGIN, V.G.; TEREBILOVA, M.A.

Decomposition of fluorides and removal of fluorine from alkylates.  
Trudy VNIINeftekyim no.3:214-218 '60. (MIRA 14:2)  
(Alkyl fluorides) (Fluorine)

KOBELEV, V.A. [deceased]; MUSHENKO, D.V.; TELEGIN, V.G.; TEREBILOVA, M.A.

Removal of fluorine from alkylates by means of copper-aluminum alloys.

Trudy VNIINeftekhim no.3:219-222 '60. (MIRA 14:2)

(Alkyl fluorides)

(Fluorine)

MUSHENKO, Dmitriy Vasil'yevich; LEVINA, Mariya Ivanovna; LEVIN, S.Z.,  
nauchnyy red.; SEGAL', Z.G., ved. red.; SAFRONOVA, I.M.,  
tekhn. red.

[Petroleum refining without mazut] Bez mazutnaia pererabotka  
nefti. Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-  
toplivnoi lit-ry, 1961. 116 p. (MIRA 15:2)  
(Petroleum—Refining) (Mazut)

S/064/61/000/003/008/009  
B101/B203

AUTHORS: Mayorov, D. M., Merkulova, O. P., Mushenko, D. V.,  
Teodorovich, V. P.

TITLE: Selection of material for the apparatus of direct hydro-  
genation of higher fatty acids

PERIODICAL: Khimicheskaya promyshlennost', no. 3, 1961, 62-64

TEXT: In connection with the development of the production process of higher aliphatic alcohols by direct hydrogenation of fatty acids, the problem of selecting suitable corrosion-resisting material for the apparatus arose. The present paper reports on corrosion tests. Two methods were applied: 1) To select the material for the hydrogenation vessel and the separator, metal specimens were tested directly in the reaction vessel of the hydrogenation plant at 340°C, 300 atm, or in the separator. After testing for 1978 hr, the following corrosion rates (mm per year) were found: CT-20 (St-20) steel 7.0; 1X13 (1Kh13) steel 0.4; 1X18H9T (1Kh18N9T) steel 0.002; 1X18H12M2T (1Kh18N12M2T) 0.01; ЭИ-435 (EI-435) 0; industrial aluminum 0.08. 2) The material for the heat exchangers was

Card 1/5

Selection of material for ...

S/064/61/000/003/008/009  
B101/B203

tested by heating the specimens with the fatty acids ( $C_7 - C_{20}$ ) in an autoclave at 5 atm hydrogen pressure up to  $150^{\circ}\text{C}$ . For less important parts, they were heated in a thermostat to  $50^{\circ}\text{C}$ . Table 5 gives the experimental data (mm per year). Testing of the electrically welded seams (analysis of electrodes, Table 4) by method 2 showed that the seams were also resistant. In a test plant, various metals were tested for corrosion resistance during hydrogenation of  $C_7 - C_9$  and  $C_{10} - C_{16}$  acids at  $230^{\circ}\text{C}$  and 300 atm. It was found that steels with 18-20% Cr were sufficiently resistant. Test results of metals and welding seams at  $100^{\circ}$  and  $150^{\circ}\text{C}$  in an autoclave are given in Table 8. The widely used 1Kh18N9T steel proved to be suitable. Testing for intergranular corrosion ( $t = 230^{\circ}\text{C}$ ,  $p = 300$  atm) of untreated and thermally treated specimens of this steel showed corrosion rates of 0.001 mm/year in both cases. A hydrogenation apparatus made of this steel has been operating 4 years now. Low-alloy steels (EI-579) are suited for temperatures up to  $50^{\circ}\text{C}$ . For temperatures between 70 and  $150^{\circ}\text{C}$ , the steel must contain at least 1% of chromium. Aero-fireclay bricks proved to be stable in tests during 200 hr at 100 and  $150^{\circ}\text{C}$  in the presence of  $C_{10} - C_{16}$  acids. There are 9 tables

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Selection of material for ...

S/064/61/000/003/008/009  
B101/B203

and 1 Soviet-bloc reference.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov (All-Union Scientific Research Institute of Petrochemical Processes)

Таблица 4

Химический состав наплавленного металла электродов, использованных для сварки сталей 1X18H9T и 1X18H12M2T (%)

1 Тип наплавленного металла	C	Si	Mn	Cr	Ni	Mo	V	Nb	S	P
4 ЦЛ-11 . . .	0,12	0,95	1,90	19,7	9,40	—	—	0,9	0,008	0,02
3 ЭНТУ-3 . . .	0,12	1,04	1,58	19,3	10,33	1,87	—	—	0,004	0,015
4 КТИ-5 . . .	0,08	0,36	3,80	21,0	11,15	1,99	0,55	—	0,01	0,017
4 ТТ-15 . . .	0,09	0,27	1,73	19,5	9,70	—	—	0,9	0,007	0,011

Table 4

Legend to Table 4: 1) Type of metal welded-on. 2) TsL-11. 3) ENTU-3.  
4) KTI-5. 5) TsT-15.

Card 3/5



Selection of material for ...

S/064/61/000/003/008/009  
B101/B203

Таблица 5

Скорость коррозии металла (мм/год)

1 Металл	2 Температура		4 Металл	3 Температура	
	50°	150°		50°	150°
3 Ст-20 . . . . .	0,35	4,0	9 EI-943 . . . . .	0,002	0,001
4 EI-579 . . . . .	0,0007	1,9	10 Аллюминий техни-	0,002	0,025
5 1X13 . . . . .	0,001	—	11 ческий . . . . .	0,02	0,03
6 1X18N9T . . . . .	0,002	0,07	12 Сплав Al+Mg . . . . .	—	0,03
7 1X18N12M2T . . . . .	0,001	0,002	13 Медь . . . . .	—	0,02
8 EI-432 . . . . .	0,0006	0,003	14 Латунь . . . . .	—	0,02

Table 5

Legend to Table 5: 1) Metal. 2) Temperature. 3) St-20. 4) EI-579.  
5) 1Kh13. 6) 1Kh18N9T. 7) 1Kh18N12M2T. 8) EI-432. 9) EI-943.  
10) Industrial aluminum. 11) Alloy. 12) Copper. 13) Brass.

Card. 4/5

MUSHENKO, D.V.; VISHNEVSKIY, N.Ye.; MAYOROV, D.M.

Organizing the production of methyl ethyl ketone. Khim.i  
tekhn.topl.i masel 6 no.8:66-67 Ag '61. (MIRA 14:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimi-  
cheskikh protsessov.  
(Ketone)

S/065/61/000/012/001/005  
E075/E135

AUTHORS: Mushenko, D.V., Levina, M.I., Tammik, M.E.,  
Mochalovskaya, A.P., Semenova, V.V., and Zimina, A.V.

TITLE: Pilot-plant deresinification of crude oils by  
contact process

PERIODICAL: Khimiya i tekhnologiya topliv i masel, no.12, 1961,  
1-7

TEXT: The contact process for deresinification of crude  
oils developed by VNIINEftekhim in 1953-1955 was tested in a pilot  
plant to obtain data for industrial planning. The plant consisted  
of a heat-exchanger, capable of heating the oil to 430-450 °C and  
70-30% vaporization, and a refractory brick-lined reactor suitable  
for operation at temperatures up to 1000 °C. An improved iron-  
containing contact catalyst was prepared for the experimental runs  
in a catalyst factory, in the form of cylindrical pellets (5 mm<sup>2</sup>).  
The reactor was charged consecutively with a 15 cm layer of  
25 x 25 mm Raschig rings, 10 cm layer of 10 x 10 mm Raschig rings,  
the first 125 cm-high layer of the contact catalyst, an

Card 1/4

MUSHENKO, D.V.; VISHNEVSKIY, N.Ye.; GUSHCHEVSKIY, A.B.; CHERNOUSOV, N.P.

Selecting a reactor for the production of isobutysulfuric acid.  
Khim.prom. no.4:271-273 Ap '62. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh  
protssessov i Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'-  
skogo i konstruktorskogo instituta khimicheskogo mashinostroyeniya.  
(Isobutyl sulfate) (Chemical reactors)

IGONON, P.G., inzh.; SVITKIN, V.V., inzh.; MITROFANOV, M.G., kand.tekhn.nauk;  
SLEPTSOV, Yu.S., inzh.; KOLOZHVAR, A.A., inzh.; PASHENKO, M.A., inzh.;  
ZHIVOLUPOV, M.A., inzh.; Primali uchastiye: MUSHENKO, D.V.;  
TSYSKOVSKIY, V.K.; SHCHEGLOVA, TS.N.; FREYDIN, B.G.; PYL'NIKOV, V.I.;  
LEVINA, M.I.; LEVIN, A.I.; LUR'YE, Ye.I.; BAYKINA, T.A.; UDOVENKO, S.A;  
MARCHENKO, T.A.

Effect of the method of liquid paraffin oxidizing on the yield and  
quality of the obtained fatty acids. Masl.-zhir.prom. 28 no.11:20-23  
N '62. (MIRA 15:12)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut (for  
Igonin, Svitkin, Mitrofanov, Sleptsov, Kolozhvari, Pashenko, Zhivolupov).
2. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh  
protseessov (for Mushenko, Tsyskovskiy, Shcheglova, Freydin, Pyl'nikov,  
Levina, Levin).3. Leningprogaz (for Lur'ye, Baykina). 4. VNIISINZh  
(for Udovenko, Marchenko).

(Paraffins)

(Acids, Fatty)

3/080/62/035/010/009/012  
D204/D307

AUTHORS: Roskin, Ye.S., Mushenko, D.V., Vishnevskiy, N.Ye.,  
Karpenko, G.B. and Dergachev, R.D.

TITLE: Study of the effects of hydrodynamic conditions on  
the polymerization of acrylonitrile

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 10, 1962,  
2328-2332

TEXT: The present work was concerned with the effects of  
stirring on the polymerization reactions of acrylonitrile in aqueous  
solutions (7%), owing to the increasing importance of such polymers  
in the production of artificial fibers. The reactions were carried  
out under argon in a stainless steel autoclave, with stirring  
(2800 rpm, Re being 4000 or 46000), at 15 - 45°C, under isothermal  
conditions. Similar experiments were carried out under static con-  
ditions, in air and in argon.  $\text{KMnO}_4$  and oxalic acid were used as  
initiators. In stirred solutions, after 15 min reactions, the  
yields increased from ~ 20% at 15°C to ~ 60% at 30° and fell to

Card 1/2

Study of the effects ...

S/080/62/035/010/009/012  
D204/D307

~ 47% at 45°C. The corresponding figures after a 40 min reaction were ~ 49, 70 and 50% respectively, tending to be always slightly lower in the more intensively stirred solutions. Yields of statically carried out reactions under argon were on the average ~ 10% higher than the above, and were higher still when the polymerization took place (still without stirring) in air. In small amounts, oxygen improves the yields, but reverses its action and even stops the reaction completely when introduced in large amounts, e.g. by stirring in systems open to the atmosphere. There are 3 figures and 1 table.

ASSOCIATION:

Leningradskiy tekstil'nyy institut im. S.M. Kirova  
(Leningrad Institute im. S.M. Kirov); Vsesoyuznyy  
nauchno-issledovatel'skiy institut neftekhimicheskikh  
protseessov (All-Union Scientific Research Institute of Petrochemical Processes)

SUBMITTED:

July 5, 1961

Card 2/2

BELOKOPYTOVA, A.P.; BLANDIN, Yu.V.; MAYOROV, D.M.; MUSHENKO, D.V.

Hydrogenation of the C<sub>10</sub> - C<sub>16</sub> acids over copper-chromia and  
zinc-chromia catalysts. Khim.i tekhn. topl.i masel 8 no.8:  
6-10 Ag '63. (MIRA 16:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimi-  
cheskikh protsessov.  
(Acids, Organic) (Hydrogenation) (Chromium catalysts)



MUSHENKO, D.V.; VISHNEVSKIY, N.Ye.; DERGACHEVA, R.D.

Decomposition and hydrolysis of isobutylsulfuric acid.  
Zhur. prikl. khim. 36 no.9:2038-2044 D '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut nefte-  
khimicheskikh protsessov.

MUSHENKO, D.V.; VISHNEVSKIY, N.Ye.; DERGACHEVA, R.D.; MALOV, Yu.I.

Preparation of concentrated isobutylene. Zhur. prikl. khim.  
36 no.10:2251-2256 0 '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut nefte-  
khimicheskikh protsessov.

MUSHENKO, D.V.; DERGACHEVA, R.D.; ROGOVA, N.V.

Regeneration of spent sulfuric acid. Zhur. prikl. khim. 36  
no.11:2329-2335 N '63.  
(MIRA 17:1)

MAYOROV, D.M.; MUSHENKO, D.V.; BOYARINOVA, L.A.; BELOKOBYTOVA, A.F.

Production of technical lauryl and stearyl alcohols from  
petroleum products. Zhur.prkl.khim. 37 no.7:1640-1642  
Jl '64.

(MIRA 18:4)

MUSHENKO, D.V.; KLIMENKO, V.I.

Using the residues of sour crude oils. Khim. i tekhn. topl.  
i masel 9 no.9:1-7 S '64.  
(MIRA 17.10,

MUSHENKO, D.V.; GVOZDOVSKIY, G.N.; SEMENOVA, V.V.

Liquid-phase oxidation of the pentane-hexane fraction of straight-run gasoline with recycling of the intermediate oxidation products. Khim. i tekhn. topl. i masel 10 no. 11: 12-15 N '65.

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimii.. (MIRA 19:1)  
cheskikh protsessov.

L 21402-66 EWT(d)/EWP(f)/EPF(n)-2/EWP(v)/T-2/EWP(k)/EWP(h)/EWP(l)/ETC(m)-6 YW  
 ACC NR: AP6009924  
 SOURCE CODE: UR/0413/66/000/004/0118/0119  
 INVENTOR: Korotkov, F. A.; Mushenko, G. I.; Dobrynin, A. N.; Sokolov, Ye. A.;  
 Lebedev, K. V.

ORG: none

TITLE: Fuel feed control device for gas turbine engines. Class 46, No. 179127

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966,  
 118-119

TOPIC TAGS: gas turbine installation, engine turbine system, turbine fuel system,  
 fuel pump

ABSTRACT: The proposed fuel feed regulator contains a fuel pump which feeds the fuel to a metering needle valve with a servo-plunger whose cavities are connected by a duct. The device also includes an engine speed limiter and speed governor, an automatic starter, and a minimum pressure valve which are located parallel to the constant pressure-gradient valve which maintains a constant fuel pressure drop across the needle valve (see Fig. 1). To increase the accuracy of control and reduce the weight and size, one of the plunger cavities is directly connected to the same line through a jet nozzle and a throttle unit. The duct between the cavities is also connected to the control element of the starter and through the minimum pressure valve to the sensing element of the speed limiter and speed governor.

Card 1/2

UDC: 621.438-543.3-531.9

L 21402-66

ACC NR: AP6009924

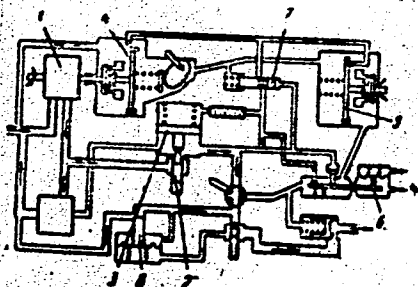


Fig. 1. Fuel feed regulator

1 - Fuel pump; 2 - needle valve; 3 - servo plunger; 4 - speed governor; 5 - speed limiter; 6 - automatic starter; 7 - minimum pressure valve; 8 - maximum flow rate regulator.

To increase the accuracy of control of the turbocompressor speeds and of the regulation of helicopter rotor rpm's in a variation of this device, the speed governor actuation is based on a derivative and the speed limiter is similar in design with a residual nonuniformity. In order to eliminate the effect of leakage on the maximum fuel flow rate, the regulator is made in the form of a jet nozzle and a constant pressure gradient valve. Orig. art. has: 1 figure. [TN]

SUB CODE: 21/

SUBM DATE: 058Sep63/ ATD PRESS: 4221

Cord 2/2 VLR



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tekh.n.red.

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v Kitais'kii Narodnii Respublitsi. Kyiv, Derzh.vyd-vo tekhn.lit-ry  
URSE, 1959. 126 p. (MIRA 13:8)  
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Narodnaya Respublika)

Building and reorganization of coal mines in the Chinese  
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Besop.truda v prom. 4 no.3:33-35 '60. (MIRA 13:6)  
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tekh.v stran.Vost. no.2:45-74 '61. (MIRA 14:9)  
(China--Coal mines and mining)

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Concerning the plan for an over-all reorganization of Stalinugol'  
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1. Stalingiproshakht.

(Donets Basin—Coal mines and mining)

MUSHENKO, I.F., inzh.

Recent technical decisions in planning deep hydraulic mines. Izv.  
vys.ucheb.zav.; gor.shur. 5 no.9:8-14 '62. (MIRA 15:11)

1. Dongiproshakht.

(Donets Basin--Hydraulic mining)

MUSHENKO, M.Ya.

Prophylaxis for recurring calculi in the urinary bladder. Trudy  
Vor. med. inst. 52:37-40 '63. (MIRA 18:3)



ALEKSANDRIYSKIY, N.V.; MASHIN, L.Ya.

Diagnosis and compound treatment of renal tumors. Trudy Vser. med.  
inst. 52:49-54 1963. (1963) 12:3.

ACCESSION NR: AT4010227

S/3056/63/000/000/0071/0075

AUTHOR: Mushenko, P. M.

TITLE: The accuracy of a thermogradientograph on a meteorological tower

SOURCE: Issledovaniye nizhnego 300-metrovogo sloya atmosfery\*. Moscow, 1963, 71-75

TOPIC TAGS: meteorology, temperature measurement, thermal gradient, thermogradientograph

ABSTRACT: After discussing the maximal permissible error in the use of the thermogradientograph (TGG), the author points out that instrument precision depends both on the rated precision and the precision of correction. Equations for determining the precision mathematically and methods for improving the precision of correction are developed. Data obtained on a meteorological tower in 1961 are given for the errors on the  $\pm 3^\circ$  and  $\pm 1.5^\circ$  scales of a TGG. The experimental data shows that in practice the TGG error does not change during conversion from one scale to another, amounting to an average of  $\pm 0.1^\circ$ . Improvements in precision can only be obtained by repeating the first stage of correction and by increasing the number of readings. "F. Ya. Klinov, B. Ya. Tolstobrov, L. Ye. Lobova, M. S. Yaly\*nichev, and V. S. Storozhko took part in the work." Orig. art. Card 1/2

*Handwritten signature*

MUSHENKO, P.M.

Comparison of the characteristics of the atmospheric turbulence recorded on an automatic integral pulsometer (AIP) and those obtained by the method of instantaneous smoke exhausts. Trudy Len. gidromet. inst. no.15:226-228 '63.

Experimental studies of the dispersion of pollution from instantaneous point sources. Ibid.:229-238 (MIRA 17:1)

ACC NR: AR6032145

SOURCE CODE: UR/0169/66/000/006/B016/B016

AUTHOR: Bekryayev, V. I.; Vaksenburg, Z. B.; Mushenko, P. M.

TITLE: Air-pollution study in the region of the Baltic GRES (State Regional Power Plant)

SOURCE: Ref. zh. Geofizika, Abs. 6B126

REF SOURCE: Sb. rabot Tallinsk. gidrometeorol. observ., vyp. 3, 1965, 47-49

TOPIC TAGS: atmospheric admixture, sulfur dioxide, air pollution, *ATMOSPHERIC CONTAMINATION, SULFUR COMPOUND*

ABSTRACT: Some theoretical schemes for computing the expansion of atmospheric impurities are analyzed on the basis of observation data of the contents of sulphur dioxide and dust in the atmosphere.

SUB CODE: 04/ SUBM DATE: none/

Card 1/1

UDC: 551.510.42

L 04205-67 EWT(1) GW

ACC NR: AR6000718

SOURCE CODE: UR/0124/65/000/009/B106/B106

AUTHOR: Mushenko, P. M.

TITLE: Estimation of the water content of cirrus clouds ✓

SOURCE: Ref. zh. Mekhanika, Abs. 9B699

REF SOURCE: Tr. Leningr. gidrometeorol. in-ta, vyp. 22, 1964, 56-66

TOPIC TAGS: atmospheric condensation, atmospheric cloud, atmospheric water, vapor condensation, exhaust gas, atmospheric temperature

ABSTRACT: At the present time there is meager information on the water content of cirrus clouds. According to the indirect estimates of Veykman, it is  $0.1 \text{ g/m}^3$ ; according to the data of Camp, based on values of the visibility range, it is  $0.03 \text{ g/m}^3$ . Minervin's measurements in crystalline altostratus clouds gave values of  $0.003$ - $0.002 \text{ g/m}^3$ ; it can be assumed that the water content has lower values in cirrus clouds. The episodic measurements of the water content in cirrus clouds by V. S. Kozhazin gave values of  $0.002$ - $0.005 \text{ g/m}^3$ . The work gave an estimate of the water content in the condensation trails of aircraft (clouds of type Co tractus). The possibility of comparison of the water content of condensation trails and cirrus clouds is pointed out. The distribution of the water content in a condensation trail is obtained by means of expressions for the specific water content  $q$  and the absolute water content  $w$ .

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L 04206-57

ACC NR: AR6000718

$$q = \frac{\Delta q_0}{\Delta t_0} (t - t_h) + q_h - \frac{\mu}{M} \frac{E(t)}{P_h}$$

$$w = \frac{\frac{\Delta I_0}{\Delta t_0} (t - t_h) + I_h - E(t)}{R_h (273 + t)},$$

where  $\Delta q_0$  is the excess difference between the moisture contents;  $\Delta t_0$  the excess temperature difference;  $t_0$ ,  $t_k$ , and  $t$  the temperatures in the initial cross section of the jet, in the medium surrounding the jet, and at any point in the jet;  $P_h$  atmospheric pressure;  $E(t)$  the saturation pressure at temperature  $t$ ;  $\mu$  and  $M$  the molecular weights of water and the water content. The method of G. N. Abramovich is used to estimate the temperature distribution and the concentrations of exhaust gas in the jet. Within the space occupied by the condensation trail, the calculated values of the water content were from 0.071 to 0.003 g/m<sup>3</sup> (water) and 0.151 to 0.004 g/m<sup>3</sup> (ice). Since the vertical extent of natural cirrus clouds is one order of magnitude greater than the thickness of condensation trails, it is concluded that the values of water content in cirrus clouds will be considerably lower than the calculated values.

V. Morachevskiy [Translation of abstract]

SUB CODE: 04

Cord 2/2 *da*

MUSHENKO, S.P. (Krasnodar)

Conservation of petroleum cores. Geol. nefiti 2 no.6:65-66 Je '58.  
(Oil fields--Valuation) (MIRA 11:7)

MUSHENKO, S.P.

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Trudy VNI no.17:36-40 '58. (MIRA 12:1)  
(Kuban Lowland--Petroleum geology)



MUSHELKO, S.P.

Studying oil recovery from reservoir rocks. Trudy VII  
no.24:64-78 '59. (MIRA 13:5)  
(Oil fields--Production methods) (Capillarity)

MUSHENKO, S.P.

Capillarity of a porous medium. Trudy DF VNII no.5:61-79  
'61.

(Capillarity) (Petroleum geology)

(MIRA 14:10)

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Using a torsion balance for determining interfacial tension by the  
method of weighing drops. Trudy KF VNII no.5:80-83 '61. (MIRA 14:10)

(Surface tension)

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neft' i gaz 6 no.2:34-39 '63. (MIRA 16:5)

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